FLIGHT

The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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CONTENTS

	PAGE
Editorial Comment	
Four-Engined Aeroplanes	377
An Insurance Premium	378
The Restriction of Air Armaments	378
The King's Cup	379
The Gothenburg International Aero Exhibition	381
An Unorthodox French Commercial Aeroplane. The Blériot 115	382
Sir Samuel Hoare and the Air Force	385
Flight Glider Designing Competition. "Norbet" Monoplane	386
Independent Air Force Re-Union	387
London Terminal Aerodrome	387
Papers at the International Air Congress: The Slotted Wing. By F. Handley Page	388
Royal Air Force	389
In Parliament	389
Inventions Committee. Curtiss Claim	390
R. M. Groves Memorial Prize Essay Awards	390

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

July 13–14	Air Race for King's Cup
July 16	Unveiling of R.A.F. Memorial by H.R.H. The Prince of Wales
July 17	Air League Royal Ball, Albert Hall
July 20	Gothenburg Exhibition
Aug. 1	Entries close from British Competitors for Schneider Cup
Aug. 3–14	Rhön Gliding Competition
Aug. 6	Aerial Derby
Aug. 6–27	French Gliding Competition, near Cherbourg
Aug. 8–12	F.I.A. Conference, Gothenburg.
Sept. 23....	Gordon Bennett Balloon Race, Belgium
Sept. 28	Schneider Cup Seaplane Race at Cowes
Oct. 8–13	Light 'Plane and Glider Competitions, Lympne
Oct. 14	Beaumont Cup Race at Istres, France
Dec. 1	Entries close for French Aero Engine Competition
1924	
Mar. 1	French Aero Engine Competition.

EDITORIAL COMMENT.

IN this week's issue of FLIGHT we publish an illustrated article describing the four-engined Blériot, type 115, on which Jean Hyacinthe Casale met his death recently. This article, it should be pointed out, was written and set in type before the very lamentable accident happened which robbed France of one of her finest pilots. The general views expressed in the article have undergone no modification, with, perhaps, the one exception of the remarks relating to the mounting of the petrol tanks immediately behind the engines. In the article we express some doubt as to the advisability of so placing the tanks, but when the machine crashed there was, so far as we have been able to ascertain, no outbreak of fire, and this in spite of the fact that it seems likely that poor Casale had no time to switch off before the machine struck. Therefore practical experience does not appear as yet to show that placing the tanks as they are in the Blériot 115 is necessarily dangerous.

Four-engined Aeroplanes

With reference to the accident itself, there are those who, on hearing that it happened on the new four-engined machine, said that another serious crash had killed a pilot of a four-engined aeroplane, inferring that this was but to be expected. In all fairness to the constructors and designers of this particular machine, it should be pointed out that, judging from the statement of Casale's mechanic, who had a marvellous escape, the crash was in no way attributable to the arrangement of the four engines, but was caused by the jamming of a control cable. Thus it is far from just to assume that the type is necessarily unsafe. As a matter of fact, Casale had flown the machine on many occasions, and had, we understand, expressed himself as pleased with it. Not only so, but he succeeded in taking off with but two engines running, and with full load on board, and demonstrated that the machine was capable of flying on either two engines, *i.e.*, two top engines, two bottom engines, or top right and bottom left or *vice versa*. This is a fact which cannot be gainsaid, and although theoretically one would expect the machine to have a tendency to dive when flying on the two

top engines, in practice this does not appear to have been the case, or, at any rate, not to an extent which could not be counteracted by the elevator controls.

As the subject of multi-engined machines is coming to the fore again, we have thought it only just that the facts of this regrettable crash should be again referred to and made clear.

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An Insurance Premium

We have had cause on previous occasions to commend the utterances of our present Secretary of State for Air, and elsewhere in this issue will be found a report of a straight talk by Sir Samuel Hoare last week at the annual luncheon of the National Citizens' Union. It was a splendid example of plain speaking for plain men who call a spade a spade, and have no use for the flowery vapourings forming the stock-in-trade of the professional politician. Right at the outset Sir Samuel made an appeal to his audience as men of business, who knowing the value and use of money would therefore seek to ensure economy in the expenditure of Government departments. He, however, felt sure that they were too sound men of business to look askance at the increased amount of money which he was asking for the air service, and he went on to point out that it was really in the nature of an insurance premium providing against attack from the air.

He could conceive it being said that it was not really worth while taking out a policy against so small a risk. Another question often asked was, From whom do you expect an attack? He certainly did not expect an attack from anyone, least of all from any of our old friends and allies. He did not imagine that, within the life-time of anyone present, great countries which had gained everything by their alliances in the past and had everything to gain by their alliances in the future would fall upon each other with all the grim horrors of modern warfare. Why, then, he would be asked, is there any need to increase the air force? It was just as easy to query the need for armaments at all, or the necessity for maintaining a one-power Navy. It was essential that, being a great Empire, we must ensure our national security, and however excellent our relations with those we number among our friends, we simply could not leave our shores open to hostile attack, neither could we live on the sufferance of any power in the world. And as the Prime Minister had pointed out, just as we had a standard for the Navy so we must have a standard for the Air Force. It was not a question of looking round and seeing where we could pare away a little here and save a little there. The question was a much larger one than that. It was to ensure that, in addition to seeing that the essential air-power requirements of the Army and Navy were fully and adequately met for home, overseas and Indian commitments, there was a properly organised Home Defence Air Force of sufficient strength adequately to protect us against air attack by the strongest Air Force within striking distance of this country. That was the absolute minimum which it would be prudent to be content with; and we feel that everyone who takes the broad and long view will agree with the Secretary for Air, and recognise that the increased amount required for the Air Force is not an extravagance, but a moderate insurance premium which is very good business.

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The Restriction of Air Armaments

From that side of the subject Sir Samuel Hoare turned to make what at first seemed a contradictory appeal. While he was seeking support for the strengthening of his hands in making sure of our Air Defence, he said he was also seeking to build up a public opinion which would assist the Government in bringing about at some future date an International restriction of air armaments. He wished to avoid a new race of armaments, particularly in a department such as the air, which month by month and year by year would grow so terrible as to be capable of destroying civilisation. It was a problem which he admitted at times seemed so difficult as to be insuperable. There was the difficulty of distinguishing between civil and military machines; there was the almost impossible task of supervising many small factories and a complicated industry.

It was all very complex, no doubt much more so than the question of restricting capital ships at the Washington Conference. None the less, with his own special knowledge of the possibilities of air-warfare developments, he thought that at the right time and in the most suitable manner the great countries might approach the problem, and, if civilisation was not to perish, they must solve it. He thought that the reduction of armaments, if it be carried out in proportion to the basic needs of every country, need endanger the security of none.

Altogether it was, in these days of hot air, an invigorating speech by a man who sees his goal, and carried conviction with it to his audience. It is well the Air realm has found itself in its representative at last.

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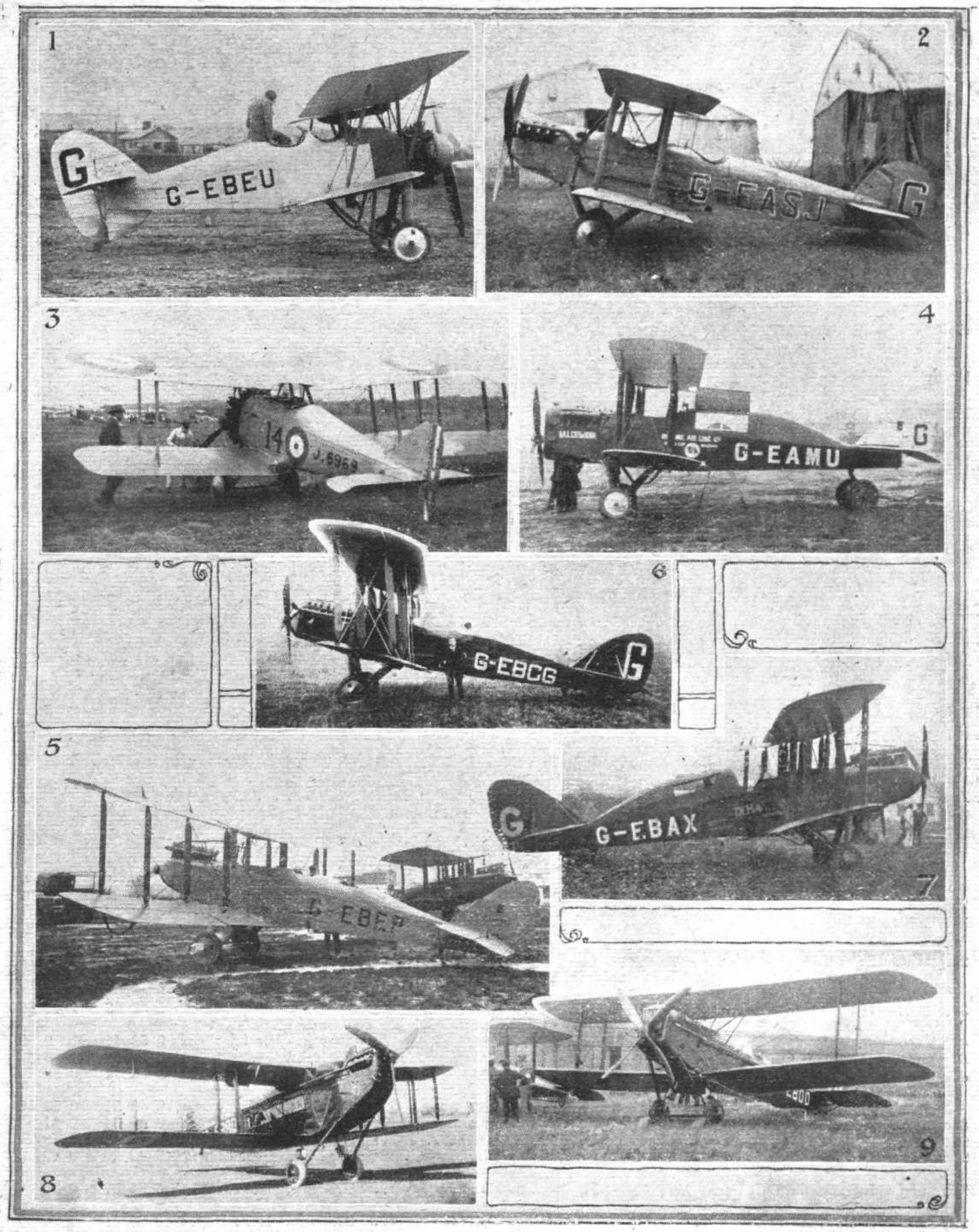
FLIGHT

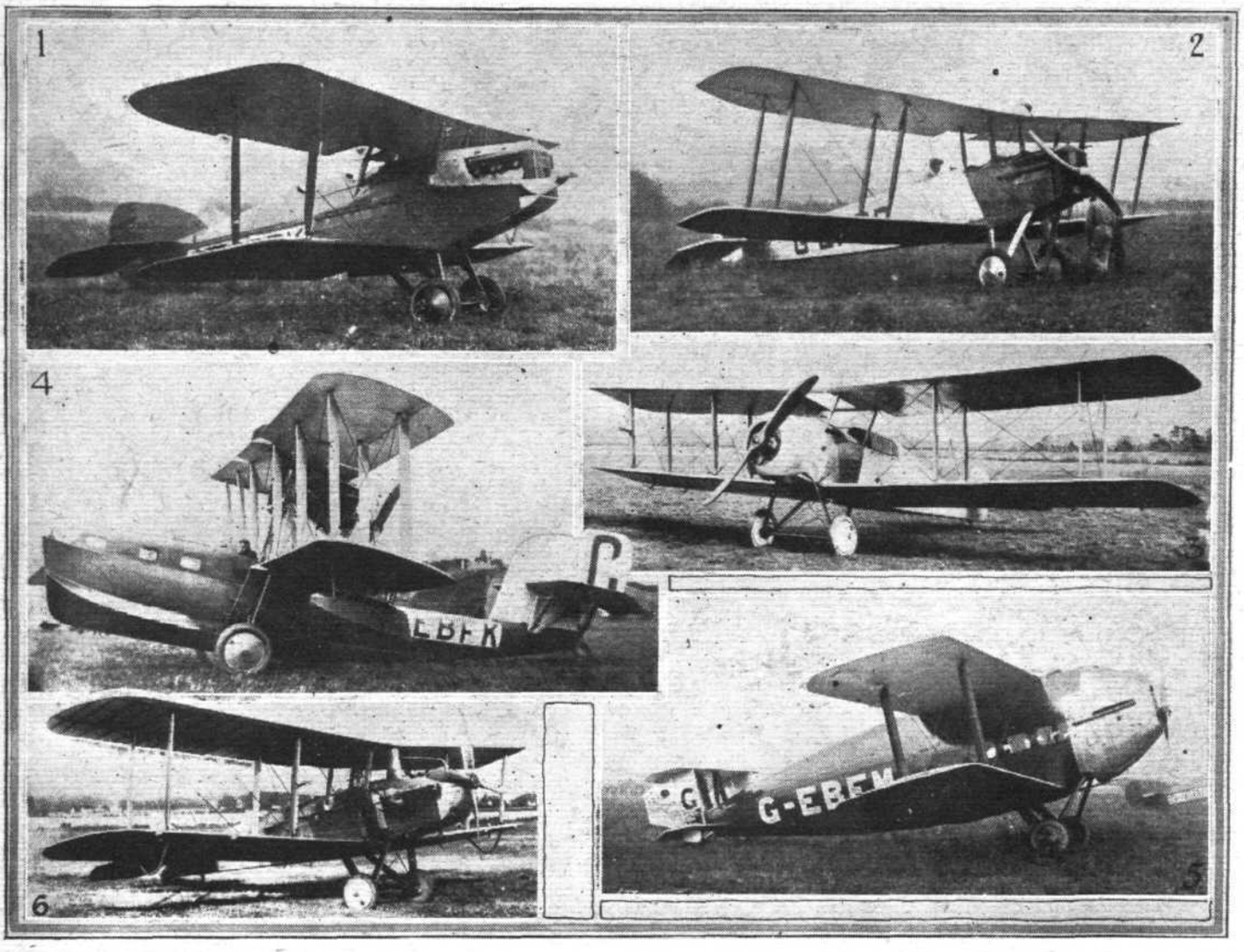
THE KING'S CUP



REPRESENTATIVE TYPES OF MACHINES FLYING IN THE KING'S CUP RACE: Above we show some of the types of machines—not necessarily the actual machines entered—flying in the King's Cup Race. 1. Armstrong-Siddeley "Siskin" (350 h.p. "Jaguar"). 2. Boulton and Paul P.9 (90 h.p. R.A.F.). 3. Gloucestershire "Grebe" (350 h.p. "Jaguar"). 4. D.H.4a (350 h.p. Rolls-Royce "Eagle VIII"). 5. D.H.9 (230 h.p. Siddeley "Puma"). 6. D.H.9a (350 h.p. Rolls-Royce "Eagle VIII"). 7. D.H.9c (230 h.p. Siddeley "Puma")—there are two of this type. 8. D.H.34 (450 h.p. Napier "Lion"). 9. D.H.37 (275 h.p. Rolls-Royce "Falcon").

THE KING'S CUP

Circuit of Great Britain Handicap, July 13 and 14, 1923



REPRESENTATIVE TYPES OF MACHINES FLYING IN THE KING'S CUP RACE: 1. Martinsyde F. 6 (200 h.p. Wolseley "Viper"). 2. Avro "Viper" (200 h.p. Wolseley "Viper"). 3. Sopwith "Gnu" (110 Le Rhone). 4. Supermarine "Sea Eagle" (360 h.p. Rolls-Royce "Eagle IX"). 5. Vickers "Vulcan" (450 h.p. Napier "Lion"). 6. D.H.9a (450 h.p. Napier "Lion"). There is also a D.H.9, fitted with a "Lion" engine.

Entries :

		Entrant.	Pilot.	Machine.	Engine.	Handicap. Sect. I. h. m. s.	Sect. II. h. m. s.
1	G-EAGP	Lieut.-Col. F. K. McClean, A.F.C.	Flight-Lieut. W. H. Longton, D.F.C., A.F.C.	Sopwith Gnu ..	110 h.p. Le Rhone ..	1 34 29	1 43 1
2	G-EAWS	Squad.-Leader Franks L. Robinson, D.S.O., M.C., D.F.C.	Squad.-Leader Franks L. Robinson, D.S.O., M.C., D.F.C.	Boulton and Paul P.9	90 h.p. R.A.F. 1A ..	1 33 46	1 42 14
3	G-EBFK	Hubert Scott-Paine ..	Capt. H. C. Biard ..	Supermarine Sea Eagle	360 h.p. Rolls-Royce Eagle IX	1 33 3	1 41 28
4	G-EAPR	A. V. Roe	B. Hinkler	Avro Viper ..	200 h.p. Wolseley Viper	0 58 41	1 3 59
5	G-EBDK	F. P. Raynham ..	F. P. Raynham ..	Martinsyde F.6	200 h.p. Wolseley Viper	0 55 32	1 0 33
6	G-EBDD	H.S.H. Princess Lowenstein Wertheim	Capt. C. D. Barnard..	D.H.9c ..	230 h.p. Siddeley Puma	0 55 1	0 59 59
7	G-EBGT	Harry Tate	Capt. H. S. Broad ..	D.H.9c ..	230 h.p. Siddeley Puma	0 49 31	0 53 59
8	G-EBBW	Theodore Instone ..	George Powell ..	D.H.34 ..	450 h.p. Napier Lion ..	0 47 34	0 51 52
9	G-EBEP	Capt. A. F. Muir ..	Capt. A. F. Muir ..	D.H.9	230 h.p. Siddeley Puma	0 45 40	0 49 47
10	G-EBFC	Douglas Vickers, J.P. ..	Capt. S. Cockerell, A.F.C.	Vickers Vulcan	450 h.p. Napier Lion..	0 43 20	0 47 15
11	G-EBCG	Lieut.-Col. M. O. Darby, O.B.E.	Capt. R. H. Stocken	D.H.9A ..	350 h.p. Rolls-Royce Eagle VIII	0 34 57	0 38 6
12	G-EBDO	Alan S. Butler ..	Major H. Hemming, A.F.C.	D.H.37 ..	275 h.p. Rolls-Royce Falcon 3	0 29 59	0 32 41
13	G-EAMU	Sir Samuel Instone ..	Capt. F. L. Barnard..	D.H.4A ..	350 h.p. Rolls-Royce Eagle VIII	0 20 46	0 22 38
14	G-EBGX	Lieut.-Col. John Barrett-Lennard, C.B.E.	H. H. Perry ..	D.H.9A ..	450 h.p. Napier Lion ..	0 3 32	0 3 50
15	G-EBEZ	George Robey	A. J. Cobham ..	D.H.9	450 h.p. Napier Lion ..	0 1 10	0 1 15
16	G-EBEU	J. D. Siddeley, C.B.E...	Frank T. Courtney ..	Siddeley Siskin	325 h.p. Siddeley Jaguar	0 0 18	0 0 18
17	G-EBHA	The Rt. Hon. Sir William Joynson-Hicks, Bt., M.P.	L. L. Carter ..	Gloucestershire Grebe	325 h.p. Siddeley Jaguar	Scratch	Scratch

THE second Handicap Race round Great Britain for the Cup presented by H.M. the King takes place on Friday and Saturday this week, and from the list of entries (see p. 380), although not as large as last year's, it will be seen that there is every likelihood of our witnessing another good and sporting race this year. It will be noticed that of the 17 machines entered, only two—the Gloucestershire "Grebe" and the Supermarine "Sea Eagle"—are new types, all the rest being more or less "old stagers." Of these it will be seen no fewer than nine come from the "D.H. Stable," two of which, a D.H.9 and a 9 A, have been fitted with Napier "Lions," and it will be interesting to observe how they will perform with this new installation.

It is to be regretted that the name of "Bristol" is absent from this year's list of entries and machines, but following the recent very sad occurrence in the Grosvenor Cup Race, the Bristol Company decided to cancel their racing engagements, which step will, we feel sure, be understood by all.

Some notable names will be seen amongst the entrants, particular interest centring round two well-known members of the "Profession," George Robey and Harry Tate—the latter, by the way, being one of the early members of the Royal Aero Club. Of the pilots, several old friends are on the list—F. P. Raynham is again flying his "Mustardsyde," Bert Hinkler has now grown out of "long clothes" (we shall miss the "Baby" this year), and this time has a chance of seeing a few others start before him. Flight-Lieut. W. H. Longton (and his white overalls?), Capt. F. L. Barnard (winner of last year's race), and Capt. H. C. Biard of Schneider Cup fame, are further "star turns."

The course is practically the same as last year, except that the start and finish are at Hendon. The total distance to be flown is about 794, divided into two sections, as follows:—Section I, Friday: London Aerodrome, Hendon—Castle Bromwich, Birmingham (91 miles)—Town Moor, Newcastle-on-Tyne (168 miles)—Renfrew, Glasgow (120 miles); total 379 miles. Section II, Saturday: Glasgow—Alexandra Park, Manchester (183 miles)—Filton, Bristol (130 miles)—Hendon (102 miles); total 415 miles. Compulsory stops of 1½ hours will be made at each of the intermediate controls, competitors staying overnight at Glasgow. The limit man starts from Hendon at 9 a.m., the others following according to their handicaps. Competitors leave Glasgow according to their handicaps for the second stage, plus or minus time gained or lost on the first stage.

In addition to the King's Cup a number of subsidiary prizes will be awarded, including the following:—

£100 (presented by the Proprietors of *The Daily Telegraph*) to the entrant of the aeroplane which completes the circuit in the fastest time.

£100 (presented by Sir Charles C. Wakefield) to the entrant of the second aeroplane to complete the circuit (*i.e.*, the second aeroplane to arrive at the London Aerodrome, Hendon).

Cup, value £50 (presented by Lord Invernairn of Strathnairn), to the pilot of the first aeroplane to arrive at Glasgow.

£50 (presented by the Directors of the Bristol Aeroplane Company) to the entrant of the aeroplane which accomplishes the fastest handicap time between London and Bristol.

Prize, value 20 guineas (presented by the Bristol Rotary Club), for the machine making the fastest handicap time from Manchester to Bristol.

Cup (presented by the Bristol Constitutional Club) for the fastest handicap time from Glasgow to Bristol.

£40 (presented by the Corporation of Glasgow) to the entrant of the aeroplane which completes Section I in the fastest time.

£25 (presented by *The Newcastle Chronicle*) to the entrant of the aeroplane which accomplishes the fastest handicap time between London and Newcastle-on-Tyne.

£25 (presented by *The Manchester Guardian*) to the entrant of the aeroplane which accomplishes the fastest handicap time between Glasgow and Manchester.

Note.—Members and Associates of the R.Ae.C. will be admitted free to the controls on presentation of their Membership Cards.

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THE GOTHENBURG INTERNATIONAL AERO EXHIBITION

The British Section

THE Gothenburg International Aero Exhibition, which is being held in connection with the Jubilee Exhibition, opens on the 20th inst., and it is gratifying to note that Great Britain is to be well represented by the foremost of our aircraft and aero-engine constructors. Up to the time of writing the number of British firms exhibiting—and in some cases participating in the flying events—aircraft and aero-engines is ten, and, in addition to these, there will be a few firms showing component parts, accessories, etc.

We give below a list—complete as far as is known up to now—of the British exhibitors:—

Armstrong-Siddeley Motors, Ltd., Coventry
A "Siskin" single-seater fighter, fitted with a "Jaguar" engine. The 160 h.p. "Lynx" and the 320 h.p. "Jaguar" aero-engines.

Blackburn Aeroplane and Motor Company, Ltd., Olympia, Leeds
A "Swift" torpedoplane, fitted with a Napier "Lion" engine.

Bristol Aeroplane Company, Ltd., Filton, Bristol
A "Bristol F.2B Fighter," fitted with a "Jupiter" engine. The 400 h.p. "Jupiter," 100 h.p. "Lucifer," and the Bristol gas starter.

Fairey Aviation Company, Ltd., Hayes
A "Fairey 3D" seaplane, together with the Oleo-pneumatic chassis for converting it to a land machine.

Gloucestershire Aircraft Company, Ltd., Cheltenham
A "Grouse" scout or ship's 'plane will be exhibited, and a 'Grebe" will be flown.

Handley Page, Ltd., Cricklewood, London
A "Hanley N.143" single-engined torpedoplane.

D. Napier and Son, Ltd., 14, New Burlington Street, London, W. 1
A 1,000 h.p. "Cub" and two 450 h.p. Napier "Lion" aero-engines will be on view.

A. V. Roe and Co., Ltd., Manchester
The Avro "Aldershot Cub," which made its first public appearance at this year's R.A.F. Pageant, fitted with the 1,000 h.p. Napier "Cub" engine.

Rolls-Royce, Ltd., 14, Conduit Street, London, W. 1
The principal exhibit will consist of the 650 h.p. "Condor" engine, but the 360 h.p. "Eagle IX" will also be seen.

Vickers, Ltd., Vickers House, Broadway, London, S.W. 1
A "Viking" amphibian flying-boat, fitted with a Napier "Lion," also various well-known Vickers components.

Miscellaneous

Cellon (Richmond), Ltd., Richmond
Cellon dopes, varnishes, etc.

Metal Airscrew Company, Ltd., Regent House, Kingsway, London, W.C. 2
Specimens of the various metal airscrews (Leitner-Watts).

Palmer Tyre, Ltd., Shaftesbury Avenue, London, W.C. 2
The famous Palmer cord aero tyres and wheels.

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R.A.F. Shooting

IN connection with the shooting at Bisley last week, the Royal Air Force Championship was won by Flt.-Serg. S. P. Spry, Netheravon, with 132 points out of 180.

The Duke of Sutherland, Under Secretary for Air, on Saturday last distributed the prizes won at the R.A.F. Rifle Meeting on the ranges at Pirbright.

A Double Fatality at Kenley

AN extraordinary accident, resulting in the death of two R.A.F. pilots, occurred on Saturday, July 7, at Kenley. A D.H.9 A, carrying Flying Officers M. G. L. Trapagna-Leroy and E. W. Logsdail, ascended from Kenley aerodrome on an instructional flight, and shortly after was seen flying very low, apparently in difficulties. It appears that the machine then struck a tree and crashed on to the roof of a house, immediately bursting into flames. Both officers were killed, their bodies, charred beyond recognition, being recovered after the fire—which completely gutted the upper part of the house—had been extinguished. The occupants of the house were uninjured.

An Italian Light 'Plane

WHAT is claimed to be the smallest aeroplane in the world was christened (the "Swallow") recently in Rome by Sig. Mussolini, the Italian Premier. It has been designed by an ex-flying officer, and is fitted with a 3 h.p. motor-cycle engine. Successful flights of several hours' duration have already been accomplished on this machine.

AN UNORTHODOX FRENCH COMMERCIAL AEROPLANE

The Blériot 115, with Four Hispano Engines

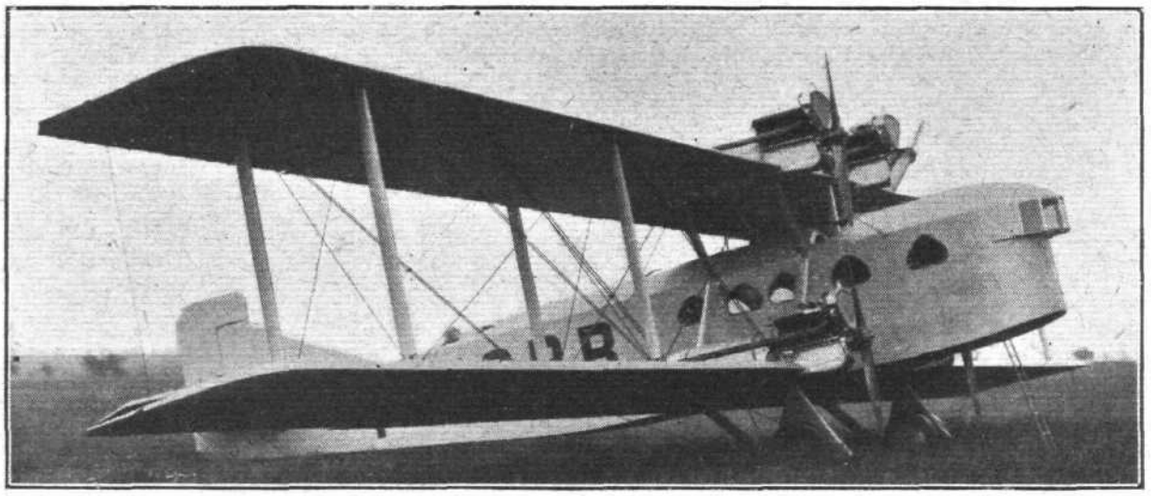
As in this country so also in France, the question of single-engined or multi-engined machines has been occupying the minds of constructors, designers, and users. Among those who believe that absolute engine reliability is an essential feature if public confidence is to be gained and retained is M. Louis Blériot, who has backed up this opinion by financing the construction of several multi-engined machines. The latest of these to be shown was the Herbemont-designed four-engined commercial machine exhibited at the Paris Aero Show in 1921. That machine, it may be recalled, had but one single strut on each side, after the fashion of the well-known Spad-Herbemont machines. At the time we rather doubted the adequacy of single-strut wing bracing on a machine in which the engines were placed tandem fashion on the wings. As a matter of fact, we believe that the type was abandoned, partly because static tests indicated that it would be somewhat difficult to provide the necessary strength without undue weight, and partly because Blériots found, as German and British designers have found, that engines in tandem is not a very good arrangement.

Early this year it was decided to proceed with the design of an entirely different type, still using four engines, but placing them on the wings, somewhat after the fashion of the "Mammoth" Blériot of the years immediately after the War. The engine placing is, however, the only feature of resemblance between the two types, as the accompanying illustrations will show.

For the particulars and illustrations of the new Blériot 115, as the machine is styled, we are indebted to M. G. Brun of Blériot Aéronautique, Suresnes (Seine), and it is worthy of note that this machine, which represents M. Blériot's latest ideas on multi-engined machines, has already established a world's record by carrying a useful load of 2,200 lbs. to an altitude of 5,600 metres (18,400 ft.), piloted by Jean Casale.*

Apart from the employment of four engines placed on the wings, the main feature at which the designers of the Blériot 115 have aimed is simplicity of construction. The fuselage, wings, and tail members are all straight-lined, and wherever joints occur they are almost without exception at right angles. This, of course, facilitates and cheapens the construction enormously. Another feature is that the engine installations have been designed as complete units, so that any engine of the group of four may be placed in any position.

The fuselage is of rectangular section, the front portion being ply-wood panels on spruce longitudinals and struts, while the rear portion has top and bottom covered with ply-wood, but the sides fabric covered over duralumin tubes and R.A.F.-wire bracing. The whole fuselage is, finally, covered with fabric, both over the ply-wood portion and the braced girder rear section.

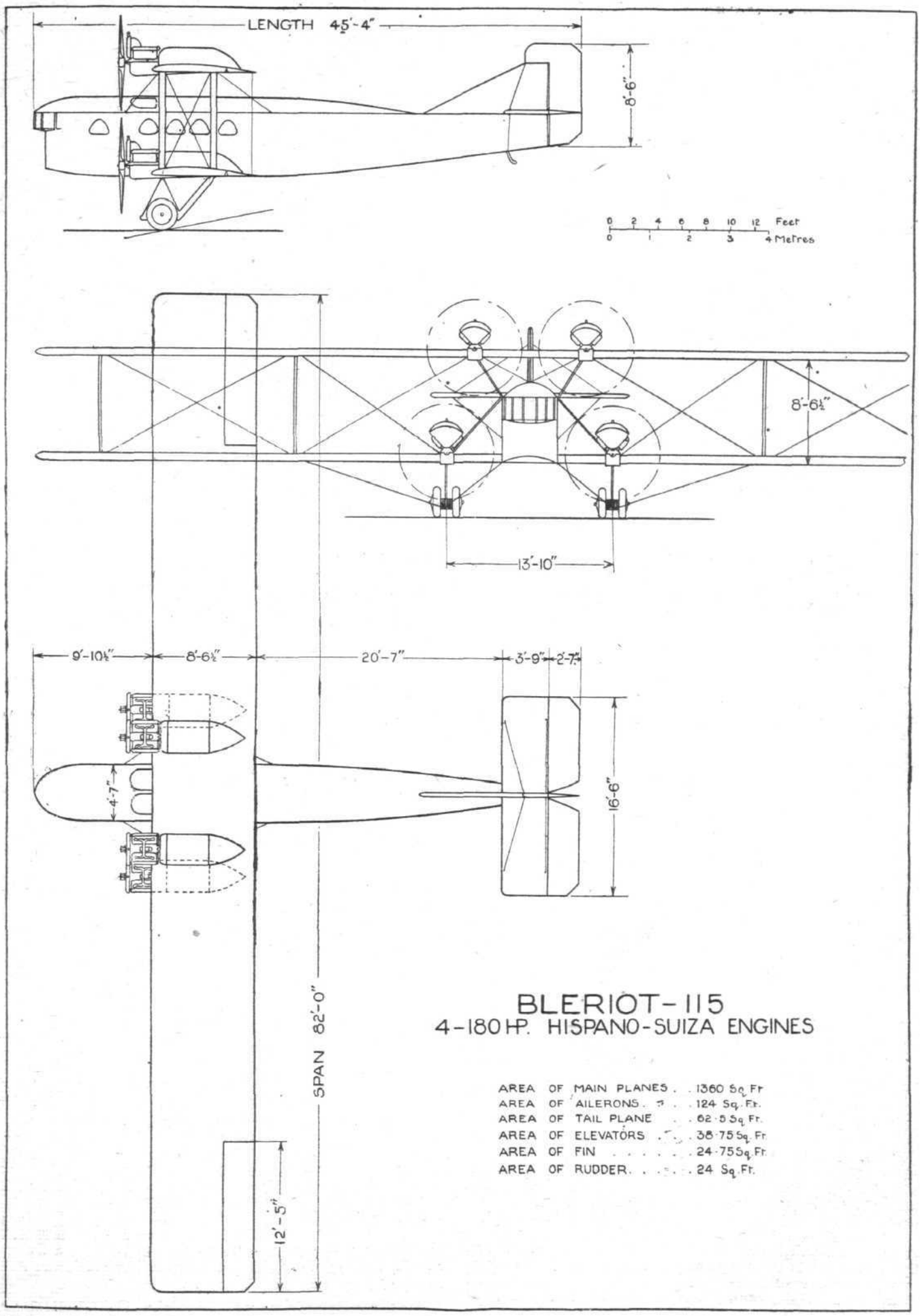


THE FOUR-ENGINED BLERIOT 115: Three-quarter front view. Note ladder leading to cabin.

The wings are chiefly remarkable for the fact that they are placed at no angle of incidence to the fuselage, the bottom surface of the lower wing being flush with the bottom of the fuselage, and that the spars are so situated in the section that front and rear spars are alike. The result is that all the interplane struts are identical, and can be used for either front or rear, inner or outer bay. This, of course, not only facilitates construction, but reduces the number of spares. The wing ribs are all alike, as the wings are parallel, and are square-ended. The aspect ratio is high (9·6), which fact should materially assist in enabling the machine to fly at reduced

* This article was written and set before the sad news had been received of the regrettable accident which resulted in the death of Jean Casale. It appears, from statements made by the mechanic on board the machine, that a control cable jammed or broke, thus causing the accident, which does not seem to have been due in any way to the somewhat unusual design of the machine.—ED.

THE BLERIOT 115: Three-quarter rear view.



THE BLERIOT 115: General Arrangement Drawings.

speed with two engines running. In this connection it is of interest to note that the Blériot 115 has been definitely proved to be capable of flying on any two engines—*i.e.*, two top engines, two bottom engines, or two diagonal engines. How this is accomplished is a little of a puzzle, as the centre of thrust would be very high with the two top engines running

The cabin has seating accommodation for eight passengers, in addition to a crew of three (pilot, navigator, and engineer). The passengers' seats are arranged along the sides of the cabin, and entrance is by a trap door in the floor, near the nose of the cabin. By this arrangement passengers can enter and leave the machine, while an emergency exit is

THE BLERIOT 115 : Side view.

and the lower ones adding resistance, but the fact remains that the machine does fly with any two, which is certainly a matter for congratulation. Not only will the machine fly level, it will even get off with but two engines running.

The four engines are Hispano-Suizas of 180 h.p., and the mounting of all four is identical, so that, as already stated, any engine will fit in any of the four positions. Thus again the question of spares becomes much simpler, while the mountings are so designed as to allow of changing an engine in a very short time (about 1 hour). All four engines run in the same direction.

From the illustrations it will be seen that the petrol tanks are placed behind the engines, and that the latter are not cowled-in at all. This arrangement has been chosen as tending to reduce fire risk, and from an aerodynamic point of view it is quite possible that the exposed engine with but a small radiator offers no more resistance than would the cowled-in engine with a larger radiator. We are not altogether in favour of running the exhaust pipes along the sides of the tanks, although it is possible that the blast of air past the pipes and tanks would effectively prevent the petrol from being ignited. It should be mentioned, in this connection, that the tanks are provided with jettison valves, so that they can be emptied in a few moments, should a fire occur. The Hispano-Suiza engines used are of the low-compression type, and probably do not develop much more than 150 h.p. each. Compressed-air starters are fitted, and it is possible for the pilot to start any engine at any time, whether on the ground or in the air.

provided in the wall of the lavatory aft of the cabin, and for the purpose of inspecting the bracing of the rear portion of the fuselage, the tail skid, control cables, etc., a gangway is provided, running from the after end of the cabin to the stern post. The floor of the cabin is oak ply-wood, waxed and polished, and the cabin walls are painted yellow and blue. A carpet runs along the middle of the floor.

The pilot's seat is placed on top of a large box containing control wires, starting sets, etc., and the pilot and engineer sit with their heads above the roof so as to have a clear view. Two of the passengers occupy seats ahead of the pilot's cockpit, and look out through "bay windows" in the nose of the fuselage. Steps are provided so that it is possible for the mechanic to climb out to any one of the engines even during flight, although this would require considerable acrobatic skill. A luggage compartment is placed aft of the toilet, and luggage is loaded and unloaded through a separate door, and does not have to be passed through the cabin at all.

Following are the main characteristics of the Blériot 115 : Length, o.a., 13·8 m. (45 ft. 3 ins.) ; span, 25 m. (82 ft.) ; chord, 2·6 m. (8 ft. 6½ ins.) ; wing area, 126 sq. m. (1,360 sq. ft.) ; weight empty, 2,750 kgs. (6,050 lbs.) ; weight of fuel (for 3½ hours), 700 kgs. (1,540 lbs.) ; useful load, 1,000 kgs. (2,200 lbs.) ; total loaded weight, 4,450 kgs. (9,790 lbs.) ; wing loading, 7·2 lbs./sq. ft. ; power loading (on 180 h.p. per engine), 13·6 lbs./h.p. ; useful load per h.p. (on 180 h.p.), 3¼ lbs. ; maximum speed near ground, 175 km. (108 m.p.h.) ; landing speed.

Air League Royal Ball

THE Duke and Duchess of York have consented to be present at the Air League Royal Ball, which will take place at the Albert Hall on Tuesday, July 17, from 10 p.m. to 4 a.m. The Ball Committee, of which Admiral Mark Kerr is chairman, includes the Duchess of Marlborough, the Duchess of Sutherland, Lady Louis Montbatten, Viscountess Rothermere, Lady Hulton, Miss Lilian Braithwaite, Miss Fay Compton, Miss Madge Titheradge, Sir Gerald du Maurier, and Mr. Dennis Eadie. Valuable prizes will be awarded for the best fancy and character dresses, but evening dress with or without decorations may be worn. Two full-sized battle 'planes and a replica of Croydon Lighthouse are included in the *mise-en-scène*, which will be carried out in the Air League colours. Special items will be rendered by Mr. Paul Whiteman and his band, and there will be exhibition dances by Miss Vanda Hoff (Mrs. Paul Whiteman). Tickets (including supper), at two guineas each, may be obtained and boxes reserved at the Organisation Offices of the Air League, Copthall House, Copthall Avenue, E.C. 2, and the General Offices, 26, George Street, Hanover Square, W. 1.

Light 'Plane and Glider Competition

IN connection with the Light 'Plane and Glider Competitions in September next, a joint prize is being presented by the Society of Motor Manufacturers and Traders, Ltd., and the British Cycle and Motor-Cycle Manufacturers and Traders Union, Ltd. Conditions of competition for this prize are being made by the Royal Aero Club by arrangement with the two Associations. Information as to the conditions will shortly be announced by the Royal Aero Club.

French Light 'Plane and Glider Competition

THE total number of entries for the forthcoming French Light 'Plane and Glider Competition at Vauville, near Cherbourg, is now 56, one of which being British. This is the light 'plane "Zephyr," a biplane fitted with a 3½ h.p. engine, entered by the Royal Aircraft Establishment Aero Club, of Farnborough.

French Government Buys the Oehmichen Helicopter

AT the conclusion of a flight of 5 mins. 15 secs. by the Oehmichen helicopter at Valentigney on Saturday, July 7, the French Government purchased the machine.

FLIGHT

SIR SAMUEL HOARE AND THE AIR FORCE

AT the fourth annual luncheon of the National Citizens' Union, held on July 6 at the Connaught Rooms, when Colonel Pretyman Newman, M.P., presided, Sir Samuel Hoare, in giving an address upon the Royal Air Force, made some powerful and outspoken remarks upon the vital subject of the safety of our Empire. Sir Samuel said he was not nervous in meeting them as the only Minister of the Government whose estimates showed an increase this year, and would show another increase next year, because he asked them to find the necessary premium that we had to pay for the insurance policy against foreign attack. It might be said, "What is this attack against which you desire the country to take out this policy?" He did not expect an attack from anyone, least of all from any of our old friends and allies. He had not so poor a belief in human nature, human sanity, and human loyalty as to imagine that within the life-time of any one present great countries that in the past had everything to gain by a common friendship and alliance, and in the future everything to gain by maintaining that friendship and alliance, were going to fall upon each other. He might be asked, "Why do we need an increase in the British Air Force?" He was inclined to answer by asking two questions: Why did we need armaments at all; and why did we need the so-called one-power standard of the Navy? Surely, not because we believed that a naval war, say, between ourselves and the United States of America, was even imaginable. The answer to the three questions was that being a great Empire we must ensure our national security, and because, whoever might be our friends and however excellent might be our relations with them, we could not leave the shores of Great Britain open to hostile attack, and we could not live on the sufferance of any other Power. And so, with no hostile intent, just as we had a one-power standard for the Navy, we must have a standard for our air defences.

Their projected policy was for one purpose alone—that of home defence. They hoped to raise this home defence force in three or four different ways. They intended, in the first instance, to have what was obviously necessary, a solid backing of the regular Air Force. But they intended, in addition, to do what they could to introduce a substantial element of non-regular personnel. They hoped, for instance, to be able to organise a certain number of these home defence squadrons upon what he would roughly call the old Militia basis. They also hoped to be able to incorporate what he would call—although it was not quite a correct description—a Territorial element. He meant that certain of the great centres of industry, particularly those which had an aerodrome in their vicinity, should be able to raise, after the manner of the old Territorial Force, auxiliary Air Force squadrons. There was a large number of officers of the Royal Air Force who served during the War and a certain number of pilots, at present engaged upon work with civil aviation air lines, to whom they might look for officers acquired for these auxiliary Air Force squadrons. A substantial part of the work might also be carried out by civilian labour. They hoped to do this, and more than double the strength of the Air Force by an expenditure that would be less than a half of the present expenditure for the Force as it was today. He was anxious to see this expansion of the Force carried into effect with as little delay as possible primarily upon the all-compelling need of national security. But there was another reason why he wished this development of British aviation. He desired to see the British Air Force become a really national force, and British aviation one of the greatest of British industries. He wanted their support not only in making our air defences secure, but also in strengthening the hands of the Government in bringing about, at some future date, an international restriction of air forces generally. He wished to avoid a new race of armaments, and particularly of air armaments, which were becoming so terrible as to endanger the continuation of civilisation. He did not disguise from them the fact that the restriction of air armaments offered problems so difficult as to appear at first sight almost insuperable. How, for instance, could they distinguish between civil and military machines? How could they prevent a great industrial country building, in a short space of time, a huge air fleet? How could they ensure the supervision of many scattered factories and a complicated industry? He acknowledged the complexity of these difficulties, and he was prepared to admit that they were far more serious than was the problem of restricting Dreadnoughts, at the Washington Conference. But with his knowledge of the potential terrors of air warfare and the intolerable burden of taxation, he said that at the right time, and in the most suitable manner, the great countries must approach this problem, and if civilisation was not to be destroyed they must solve it. The reduction of armaments as a whole, if it be carried out in proportion to the basic needs of every country, need endanger the security of none.

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M. Barbot Honoured

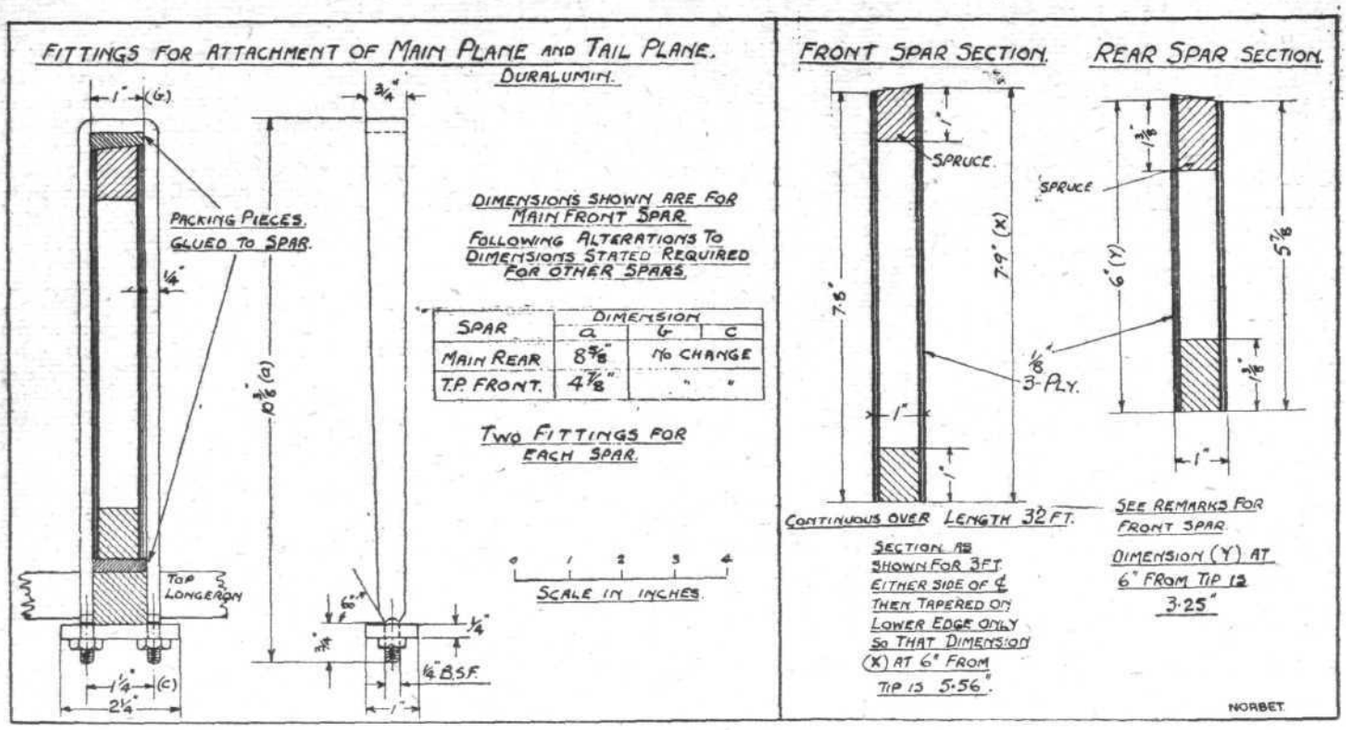
M. GEORGES BARBOT, who recently crossed and recrossed the Channel on a Dewoitine light 'plane, has been appointed Chevalier of the Legion of Honour.

U.S. Balloon Disaster

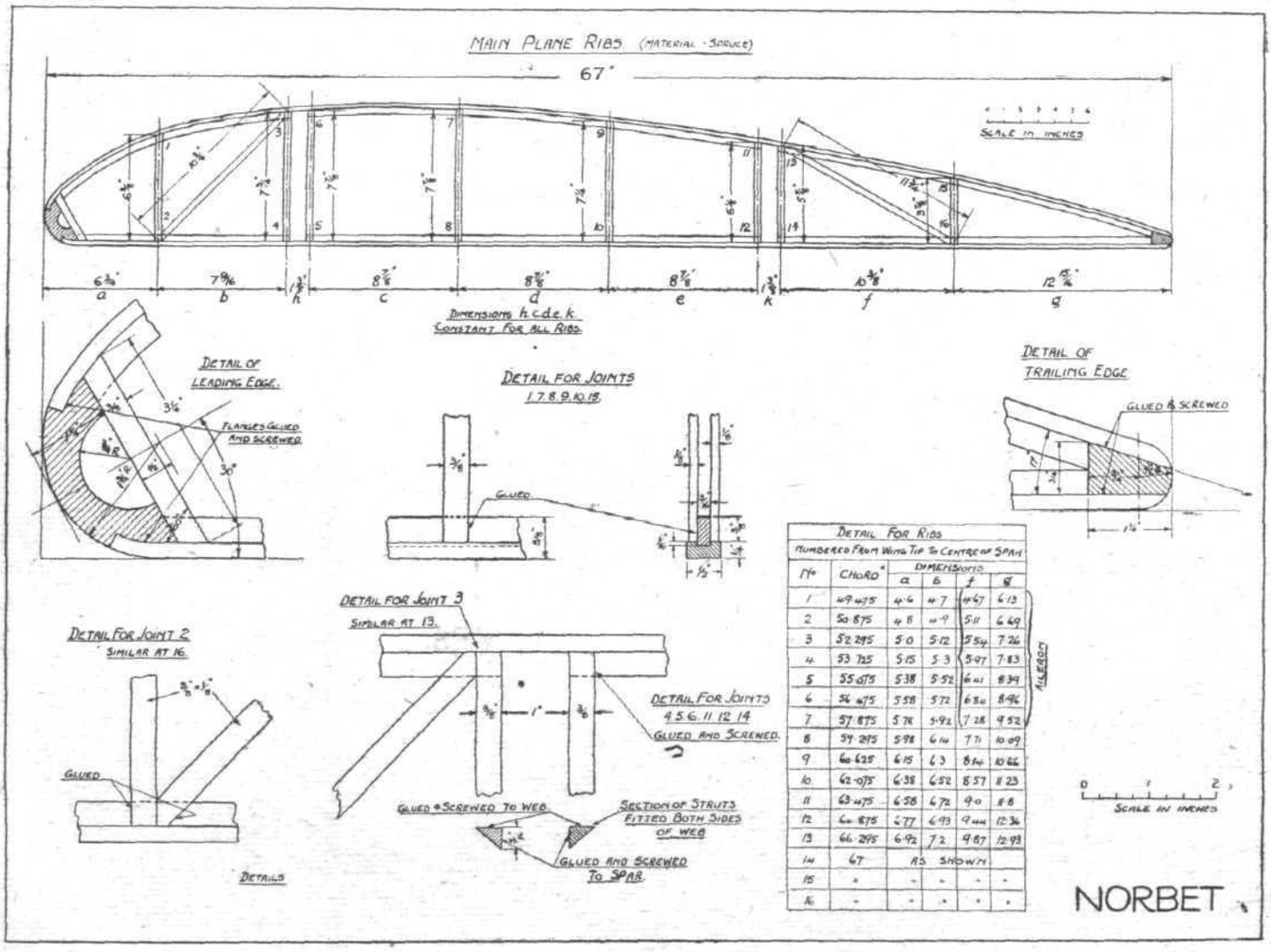
Two U.S. naval officers, Lieuts. Roth and Null, met with tragic disaster whilst taking part in the national elimination race for the forthcoming Gordon Bennett Balloon Race. They had left Indianapolis, in naval balloon A.6698, on July 4, and were missing for several days. Then the half-inflated envelope of the balloon was found in Lake Erie, but without the basket, which was discovered two days later near Port Stanley with the body of Lieut. Roth lashed to it, Lieut. Null's body has not so far been found.

AIR CONGRESS DELEGATES' VISIT TO WEYBRIDGE WORKS OF VICKERS, LTD.: On Thursday of Congress week members and delegates to the International Air Congress visited the Weybridge Works of Messrs. Vickers, Ltd. Above is a photograph of some of the visitors, included in the group being Col. Saconnet, Lieut.-Col. G. Casse, Commander A. E. V. Grandjean (Danish Admiralty), Mme. Grandjean, Jkhr. Van Heemstede, Don Alfredo Arruga, and Lieut.-Col. H. Walaardt Sacre.

"FLIGHT" GLIDER DESIGNING COMPETITION



THE MONOPLANE GLIDER "NORBET": Details of spars, spar fittings, etc.



THE MONOPLANE GLIDER "NORBET": Dimensions, details, etc., of ribs. The absence of diagonal members in the bays between the spars is criticised by the judges, and these members should be added to give torsional strength to the wing.

FLIGHT

"FLIGHT" GLIDER DESIGNING COMPETITION

Monoplane Glider "Norbet"

(*Continued from page* 332)

ON June 21 the general arrangement drawings of the monoplane glider "Norbet" were published, as well as construction drawings of the fuselage. This week the description is continued with details of the wing construction.

Wing Construction

In the comments by one of the Judges, previously quoted, reference was made to the spar construction of "Norbet," it being pointed out that the deep and thin three-ply webs may have severe loads thrown upon them. Nevertheless, this type of spar is fairly extensively employed, and is reasonably cheap to build. The dimensions of the main spars are indicated in one of the set of drawings. The spruce flanges are 1 in. deep by ¾ in. wide, with the top flanges bevelled to conform to the rib curves. The same sheet of drawings also shows the Duralumin fittings used for securing the spars to the top longerons of the fuselage. While we have no personal objection to the use of Duralumin, it should be pointed out that the Air Ministry does not allow this material to be used for any part which has to withstand any heavy stress. Also for amateur construction it would be somewhat expensive to make the fittings shown.

The wing ribs are shown in considerable detail in the second set of drawings. The construction is simple, but the design is fundamentally wrong in that there are no diagonal members between upper and lower flanges in the bays between the spars. This defect in design was pointed out in the Judge's criticism, and we call attention to it again. Especially in a cantilever monoplane, where torsional stresses are the most difficult to take care of, it is of the utmost importance that the ribs should be capable of transmitting loads from one spar to the other. This the type of rib designed by Mr. Smith would not do, and the rectangular rib bays between the spars would have to be triangulated before the wing could be considered safe. To do so would, however, be a relatively simple matter.

The designer does not show the form of internal drag bracing which he intends to use, but either box ribs and wire bracing or tubular compression struts and wire bracing could be used.

(*To be continued.*)

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INDEPENDENT FORCE REUNION

FOR the fifth Annual Reunion Dinner of the Independent Force, Royal Air Force, Air Chief-Marshal Sir H. M. Trenchard again occupied the chair at the Hotel Cecil on June 26. Over 50 members were able to be present, and again this annual event emphasised the great wisdom of bringing together those who, in the most anxious and vital period of the War, were concerned together in their highly specialised art in helping so materially to bring about the final collapse of the enemy. There was a more subdued and expectant spirit over the meeting; possibly from the fact that such gratifying progress was being made in bringing aviation into its own at long last. Even the Chief appeared to be affected by its great influence, and, naturally, with so sympathetic a head as "Boom" it was impossible for those who so lovingly surrounded him to be untouched.

Following the pre-dinner gathering and a very excellent banquet, Sir Hugh Trenchard said that he wished to thank very cordially "Toc" Smith and Sq.-Ldr. Cleverly for their efforts in keeping the numbers up for the reunion. But he wished to see a much greater assembly as each year came round. He hoped each one present that evening would increase next year's number by one, and he would undertake to add ten as his own quota. Upon this occasion, he would say nothing respecting immediate developments, having regard to the position at the moment of aviation matters, and therefore his customary speech would have to be excused.

Col. Sir Walter Lawrence, in proposing the health of the Chairman, was even more brief. He recalled his statement last year that so long as there was a Trenchard with them, there would always be a "Boom" in the Air Service. It was significant that the momentous announcements in Parliament were being made at the time they were meeting there, and he therefore with great pleasure gave them the toast of Sir Hugh.

Sir Hugh Trenchard was content to acknowledge the great round of applause, followed by musical honours, with the one expressive word: "Thanks."

After which the company adjourned for reminiscences, regretting that it had been necessary for H.R.H. the Duke of York, owing to the pressure of engagements, to send the following message: "I am sorry that I cannot be with you, and I wish you all a very happy evening."

Those present were:—Major-Gen. J. E. Dickie, Col. Sir Walter Lawrence, Group Capt. C. L. N. Newall, Wing-Cdr. A. V. Bettington, Wing-Cdr. M. G. Christie (U.S. Attaché at Washington), Wing-Cdr. W. D. Beatty, Wing-Cdr. H. R. Nicholl, Wing-Cdr. L. A. Pattinson, Wing-Cdr. J. H. A. Landon, Wing-Cdr. C. E. H. Rathborne, Lieut.-Col. R. H. Collier, Lieut.-Col. R. C. Donaldson-Hudson, Lieut.-Col. F. H. Errington, Lieut.-Col. the Hon. V. Russell, Lieut.-Col. J. Waley-Cohen, Sq.-Ldr. S. M. Cleverly, Sq.-Ldr. A. Gray, Sq.-Ldr. J. C. Quinnell, Sq.-Ldr. W. R. Read, Sq.-Ldr. W. J. Ryan, Sq.-Ldr. W. G. P. Young, Major E. K. Brown, Major S. A. Chambers, Major F. M. Iredale, Major L. G. S. Reynolds. Major T. V. Smith, Flt.-Lieut. J. H. Dale, Flt.-Lieut. R. Halley, Flt.-Lieut. E. J. McLoughlin, Flt.-Lieut. W. E. Reason, Flt.-Lieut. C. A. Stevens, Flt.-Lieut. R. S. Topham. Flt.-Lieut. Stammers, Capt. L. C. Bygrave, Capt. E. D. Harding, Capt. T. B. Marson, Capt. A. G. Trussell, F.O. W. W. Bradford, F.O. M. Burbidge, F.O. J. W. Jean, F.O. C. G. Jenyns, F.O. R. S. Martin, O.O. J. Mitchell, Lieut. J. H. Dewhirst, Lieut. R. A. Martin, Lieut. L. C. Pitts, 2nd Lieut. W. L. Beck, Mr. C. G. Grey, Mr. Stanley Spooner.

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LONDON TERMINAL AERODROME

Monday evening, July 9, 1923

THE outstanding feature of the past week on the continental airways has been the rise in popularity of the London-Amsterdam-Berlin route operated by the Daimler Airway and the K.L.M. Passengers on this route are now so numerous that it is almost a daily occurrence for more seats to be enquired for than are available, and the through machines to and from Berlin are always full to capacity. This state of affairs has, of course, been in evidence for some time on the London-Paris route, but it is extremely gratifying to all concerned that London-Amsterdam-Berlin route, which was at one time looked upon as being a purely goods' service, should improve to its present state. Incidentally, the most gratifying point of this improvement is that the majority, in fact, practically all, the air travellers are business men, whereas the popularity of the Paris line depends to a large extent on pleasure-seekers.

Capt. W. R. Hinchcliffe, who was chief pilot for the Daimler Airway since its inception, has now joined the Instone Air Line as pilot and will in future fly regularly for them.

The Heat-Wave and the Airways

The intense heat of the past few days has had its effect in increasing to some extent the traffic on the airways, and, in fact, there is little doubt but that air travel is the coolest—and only enjoyable—method of transport during spells of heat like that of the last few days. Pilots have had to dispense with their flying-kit, and were even then, at times, oppressively warm when flying some thousands of feet up.

King's Cup Competitors

Preparations for the King's Cup Race round Britain are, as far as the aerodrome is concerned, being pushed rapidly forward, and during the week-end the two competitors from the 'drome have been making several trial flights. Mr. F. L. Barnard, last year's winner, has been testing the Instone D.H.4A, which has a specially-tuned Rolls-Royce engine fitted, and he is hopeful of again pulling off the race. The D.H.34, which Mr. Theodore Instone had entered, was scratched on Saturday owing, it is said, to the demands on the regular service. Mr. Powell is extremely disappointed at this, as with Mr. R. M. Dixon, as his navigator, and Messrs. W. Clark, C. Davis and H. Hall, as crew—to attend to the machine at the various halts during the flight—he was very hopeful of being well-placed at the finish.

During the week a basket of Dutch cherries arrived by a Daimler "air express" from Amsterdam, consigned to the Queen of Holland in the Lake District. These were immediately despatched from Euston by passenger train, and arrived in the Lake District the morning after they had been gathered in Holland.

PAPERS AT THE INTERNATIONAL AIR CONGRESS

THE SLOTTED WING

By F. Handley Page

THE first part of Mr. Handley Page's paper dealt with the general principle of the slotted wing, and with results obtained with the older form of slot, formed by a thick auxiliary aerofoil. He then referred to a later development, in which

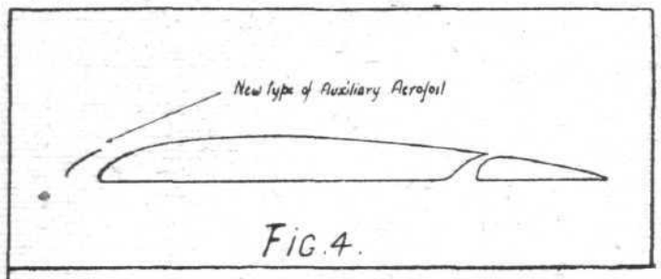

FIG. 4.

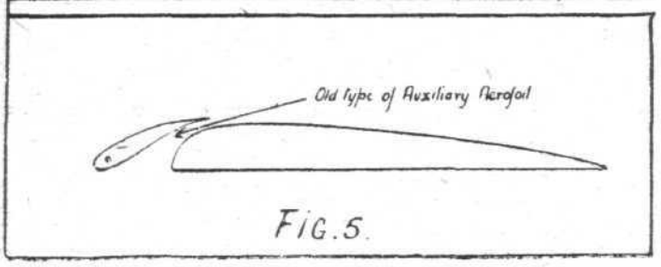

FIG. 5.

the auxiliary aerofoil is of the single-surface type. As this has the advantage of affecting, when closed, the resistance, to a smaller extent, his remarks are quoted as follows :

"Considerable wind-tunnel work on the best form of slot and auxiliary aerofoil has been carried out. It has now been found that the single surface type of auxiliary aerofoil gives a result equal to, and in some cases better than, one that would be termed a thick section (Fig. 4).

"Firstly, it has the advantage that with the slot-closed condition the true basic section is retained, so that no increase in drag is brought about.

"Secondly, it obviates the tail adjustment that is necessary with the swivelling form of slot (Fig. 5), due to the backward movement of the centre of pressure on opening the slot, a C.P. movement that has also to be compensated for on planes fitted with flaps. This is practically negligible with the single surface type of aerofoil, as the forward movement of the auxiliary aerofoil practically compensates for the backward movement of the centre of pressure."

By applying the single-surface auxiliary aerofoil and slotted flaps to R.A.F. 15 section very good results have been obtained, as shown in Figs. 14 and 15. The section is shown in Fig. 16.

Continuing, the lecturer said :

"Tests on various Sections show that a definite increase can be expected, these being approximately in the order of :—

Thin Sections.—50 per cent. for front slot, and 40 per cent. for slotted flap.

Medium Sections.—40 per cent. for front slot, and 30 per cent. for slotted flaps.

Thick Sections.—35 per cent. for front slot, and 25 per cent. for slotted flap.

"Dealing with thin or high-speed sections—R.A.F./15 being taken as an example—the latter tests show that the front

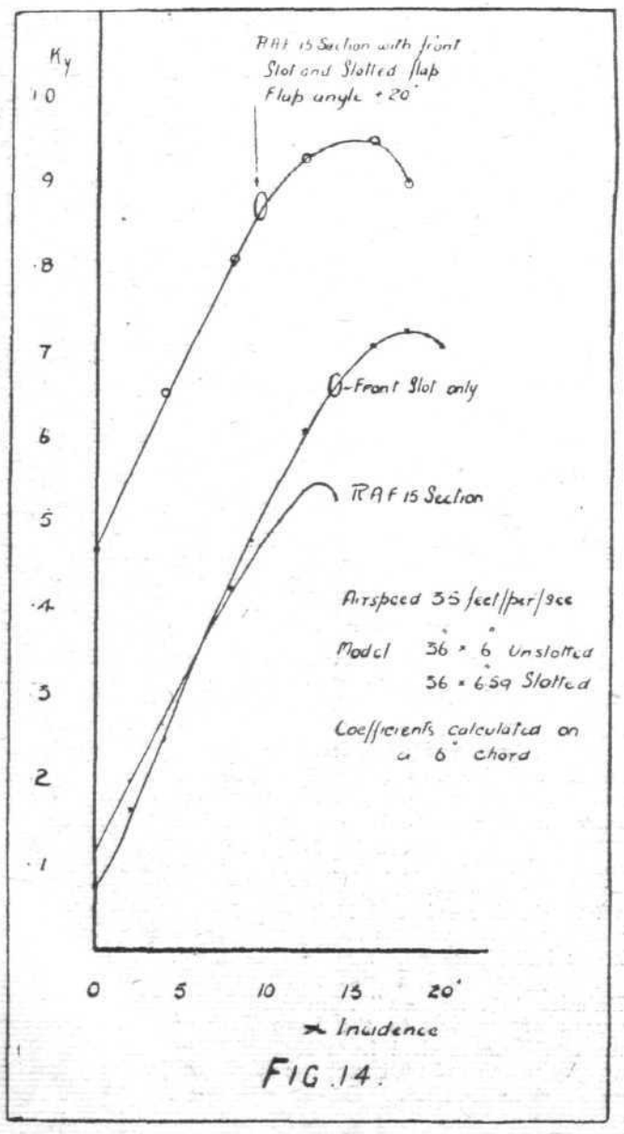

FIG. 14.

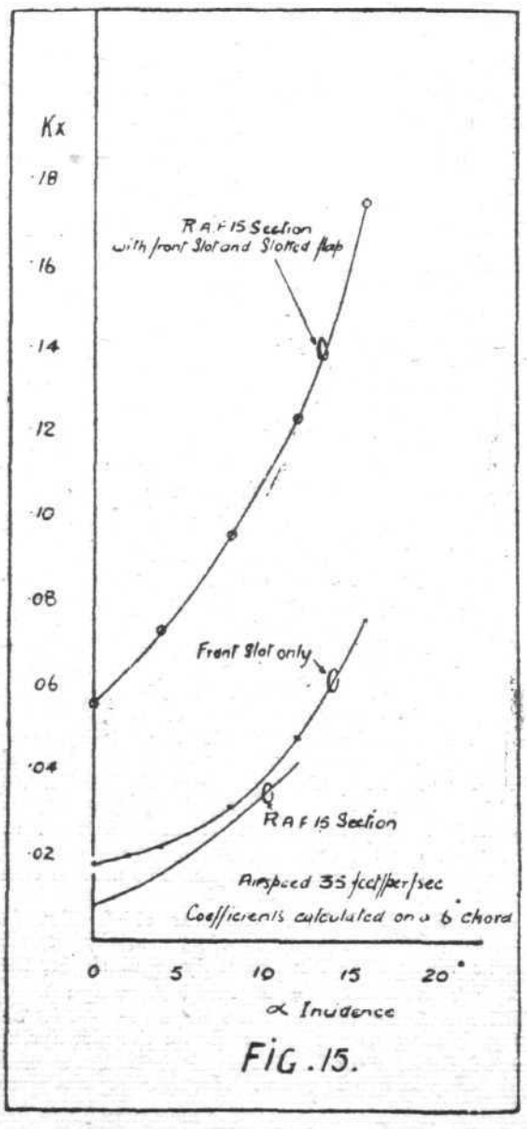

FIG. 15.

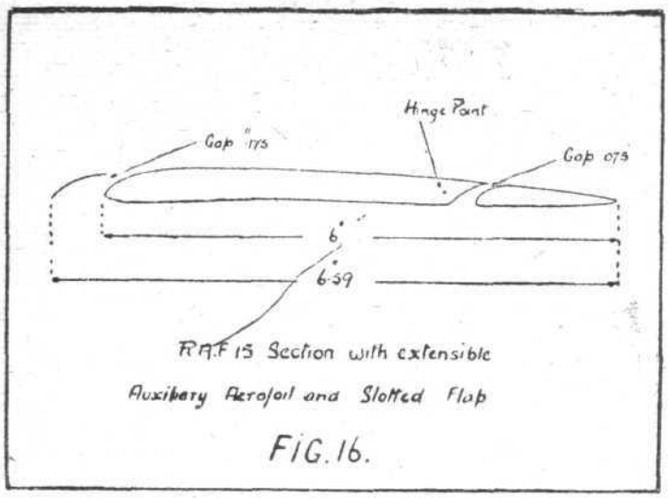

FIG. 16.

slot of the extensible form gives a maximum Ky of ·71 at 16°, and with the slotted flap at an angle of 20° ·946 is obtained at 16°. The maximum L/D of the basic section is 17·2, with front slot open 14, and with slotted flap 9·00.

"The rear slot plays a considerable part in regard to maximum lift, and always tends to increase the lift. This increase can be of varying orders, and depends mainly on the formation of the rear slot.

"The difference in centre of pressure movements with slot closed and slot open is of negligible quantity. By moving down the flap a backward movement of centre of pressure occurs, which would be almost twice as great if the extensible form of auxiliary aerofoil had not been adopted.

"A very notable feature of the results on RAF/15 is that that maximum increase in lift is obtained at an angle of only 1° in excess of the basic section, so that its application to any standard machine is possible."

Control of Slotted Wing Machines

"One very important application of the slotted wing lies in the direction of obtaining increased lateral control at the slow speeds of landing and taking-off. With the single front slot only full lateral control can, of course, be obtained in the ordinary manner, there being no diminution of control effect such as is encountered when an increase in life coefficient is obtained by the use of the flaps alone. With the slotted flaps, particularly with high-lift sections, an increase in rolling moment is obtained without a corresponding increase in yawing moment. This increase can be of a very high order, in some cases double the control usually obtained at large angle of incidence, with very little increase in yaw.

"This can be still further improved, if necessary, by differential operation of the ailerons, as proposed and carried into effect by Captain De Havilland. Still more important, however, than these existing features is the use of the front slot in conjunction with the ailerons for the prevention of burbling on the wing which is lower and causing the high wing to burble. By the manipulation of the slot or parts connected therewith a very big rolling moment can be obtained, with an actual decrease in yawing moment, compared with existing controls at slow speeds. In some cases the yawing moment can actually be negative in value. The control feature is a most important one, as adequate control at the slow speeds obtained is necessary if the full value of the increased lift coefficient is to be obtained."

THE ROYAL AIR FORCE

London Gazette, June 26, 1923

Memorandum

Wing Commander R. H. T. Jobson relinquishes his temporary commission on ceasing to be employed; June 1.

Erratum

London Gazette of June 19, 1923 (FLIGHT, page 355).—*For* E. D. Cummings, D.F.C., *read* E. D. Cummings, A.F.C.

London Gazette, June 29, 1923

Reserve of Air Force Officers

Class A.

The following are granted commns. on probation in General Duties Branch in ranks stated, with effect from the dates indicated:—

Flying Officer.—A. K. Bamber (June 22).
Pilot Officers.—W. R. Bannister (June 29); D. C. Evemy (June 29).

London Gazette, July 3, 1923

General Duties Branch

The following are granted permanent commissions as Flying Offrs., with effect from dates indicated. *Gazettes* of dates indicated in brackets, appointing them to short service commns., are cancelled:—C. W. Hill; Dec. 6, 1920 (Dec. 17, 1920). J. A. McDonald; Dec. 12, 1919 (Dec. 12, 1919): C. L. Lowe, D.F.C., is granted a short service commn. as a Flying Officer with effect from, and with seny. of, June 25. Pilot Offr. F. Beesley to be Flying Offr.; July 2. The Following Pilot Offrs. are confirmed in rank (June 1):—H. M. Kenyon, B. H. Shaw, J. M. Darroch. The short service commn. of the following Pilot Offr. is terminated on cessation of duty:—D. C. D. Stephen; June 30. Flying Offr. R. B. Sutherland, D.F.C., is transferred to the Reserve, Class A; July 2.

Stores Branch

Flying Offr. R. T. Carter is transferred to Stores Branch for account duties from General Duties Branch; June 14.

Memorandum

The permission granted to Lieut. G. H. Hall is withdrawn on his enlistment; June 12.

ROYAL AIR FORCE INTELLIGENCE

General Duties Branch

Squadron Leaders: R. Collishaw, D.S.O., O.B.E., D.C.S., D.F.C., to R.A.F. Depot. 27.5.23, pending disposal on transfer to Home Estab. V. Gaskell-Blackburn, D.S.C., A.F.C., to Egyptian Group, Headquarters, Egypt. 14.6.23.

Flight Lieutenants: C. Pilkington, A.F.C., to School of Army Co-operation, Old Sarum. 1.7.23. J. H. O. Jones to Headquarters, Coastal Area. 29.6.23.

Flying Officers: R. J. Copley to No. 5 Armoured Car Company, Iraq. 19.4.23. E. K. Blenkinsop to R.A.F. Depot (Non-effective Pool). 2.6.23, on transfer to Home Estab. W. J. Richards to No. 5 Wing Headquarters, Biggin Hill. 27.6.23. A. S. Godley to R.A.F. Depot (Non-effective Pool). 4.6.23, on transfer to Home Estab. L. Butler to Night Flying Flight, Biggin Hill. 1.7.23. H. O. Brown, M.M., to Aeroplane Experimental Estab., Martlesham Heath. 9.7.23. F. W. Foster, D.F.C., D.S.M., to R.A.F. Base, Leuchars (No. 441 Flight). 21.5.23.

Pilot Officer: T. J. Desmond to No. 6 Squadron, Iraq. 8.6.23.

Stores and Accountants Branch

Flight Lieutenants (Stores): W. C. Green to Headquarters, Coastal Area. 2.7.23. R. A. Young to No. 1 School of Technical Training (Boys), Halton. 2.7.23.

Flying Officers (Stores): R. D. Lambert to R.A.F. Depot (Non-effective Pool). 19.5.23, on transfer to Home Estab. J. R. Gardiner to No. 32 Squadron, Kenley. 9.7.23.

Flying Officer (Accountant): R. T. Carter to Headquarters, R.A.F., Cranwell. 2.7.23.

Pilot Officer (Accountant): R. W. Freeman to Stores Depot, Egypt. 22.6.23.

Medical Branch

Flight Lieutenants (Medical): D. McLaren, M.B., to Station Commandant, Iraq. 21.5.23. A. Briscoe, M.B., to Basrah Combined Hospital, Iraq. 30.5.23.

IN PARLIAMENT

Commercial Air Service and Utilisation for Defence

MR. BATEY on July 2 asked the Secretary of State for Air if he will state the number of men trained in the art of flying with the commercial air service and who could be utilised for the purposes of defence if it became necessary; and the number of air machines now used for the commercial air service that could be utilised for defence?

Sir S. Hoare: As regards the first part of the question, whilst 704 civilian pilots' licences have been issued during the last few years, only 104 of these licences are still current. As regards the second part of the question, there are 30 airworthy machines on the civil register which could be utilised for operational purposes in emergency, but I would add, in qualification of this figure, that the variety of types would cause difficulties in keeping the machines efficient under service conditions. In addition there are 50 airworthy machines which could be used for training but not for operations.

International Air Congress

SIR H. BRITTAIN on July 5 asked the Secretary of State for Air whether he is able to make any statement with regard to the utility of the International Air Congress recently held in London; and whether it has been decided where the next gathering shall be held?

The Secretary of State for Air (Lieut.-Col. Sir Samuel Hoare): Previous International Air Congresses have been held in Paris, at Chicago, at Milan, and Nancy. The Congress held in London last week, therefore, continued the policy of maintaining international amity in the air, and afforded a valuable opportunity for the discussion of technical papers connected with the science and practice of aeronautics. I am most grateful to the members of the various committees who were responsible for the arrangements. It seems probable that the next International Air Congress will be held in Brussels at the invitation of the Belgian Government.

Inventions Commission: Curtiss Flying-Boat Claim

CLAIMS of the Curtiss Aeroplane and Motor Corporation, Mrs. Porte, and the Norman Thompson Flight Company, Ltd., in respect of aircraft and flying-boats were further heard by the Royal Commission on Awards to Inventors on July 2.

Counsel argued the point as to whether or not there was disclosure of the main features and design of the Curtiss flying-boat before the War.

Mr. Whitehead, K.C., for the Crown, contended that there was nothing to prevent the British Government developing the Curtiss boat they originally purchased, as no monopoly rights existed.

Mr. Hotchkiss, for the Curtiss Corporation, submitted that the sale in question constituted a disclosure of special or exclusive information.

It was stated in evidence that the British Government made a loan of £120,000 to the Curtiss Company to extend their works, and orders to the value of 11,000,000 dollars were given to the company.

The Commission dismissed the claim of the Curtiss Company, Mr. Justice Sargant, the chairman, stating that they were of opinion that the Crown had no case to answer. There was, in their view, a general publication of the idea embodied in the "America" flying-boat to a considerable extent in patents, and still further by an announcement in an aeronautical journal in 1914. Any gaps in that information would appear to have been completely filled by the delivery of two "America" flying-boats to the British Government as ordinary purchasers in the expectation, no doubt, that they would become valuable customers of the Curtiss Company.

The company, he added, no doubt were relying upon the validity of their English patents, but that position they, unfortunately, had to abandon. It appeared to the Commission that in such circumstances the British Government was not more liable to remunerate the producer or inventor of the article than would be an ordinary purchaser.

R. M. Groves Memorial Prize Essay Awards

THE awards in the 1923 competition for the R. M. Groves Memorial Essay on "A Forecast of Aerial Development," open to all members of the Royal Air Force, are as follows:—

First Prize: £30 and books.—Squadron-Leader W. S. Douglas, M.C., D.F.C., R.A.F. Staff College, Andover.

Second Prize: £20 and books.—Squadron-Leader N. H. Bottomley, A.F.C., No. 4 Flying Training School, Egypt.

Third Prize: £10 and books.—Squadron-Leader A. A. Walser, M.C., D.F.C., Air Ministry.

A special prize of £10 is also given for the best imaginative *résumé* on "Aviation in the Next World War." On this occasion the prize has been awarded to Flight-Lieut. R. P. Musgrave Whitham, M.C., R.A.F. Hdqrs, Middle East, Cairo.

The Memorial Essay, it will be remembered, was established by the family of the late Air Commodore R. M. Groves, C.B., D.S.O., R.A.F., who died in Egypt in 1920. The essays are required to be divided each year into three parts, the first relating to Imperial Defence, the second in relation to Civil Aviation, Exploration, etc., and the last to an imaginative *résumé* on Aviation and the next World War.

France's New Air Force

THE Commission of the French Chamber of Deputies issued their report on the Bill providing for the new Army organisation of France. The new provisions for the air arm include 132 fighting squadrons, 76 observation squadrons, 18 technical companies, and 15 companies of mechanics.

Some Climb!

ACCORDING to reports in the daily Press the "Motor Glider" looks like putting real aeroplanes completely in the shade. It is stated that Lieut. Simonet ascended from Evere aerodrome on Tuesday and climbed to 2,600 ft. in less than one minute—in a tiny monoplane fitted with a 7 h.p. engine.

PERSONALS

Married

Squadron Leader S. M. CLEVERLY, R.A.F., was married quietly on July 5 at Christ Church, Westminster, to ISABEL, widow of WALTER JEEVES, late of Dyxcroft, Rottingdean, Sussex.

To be Married

A marriage has been arranged, and will take place on July 30, at St. Paul's, Knightsbridge, between Lieut.-Col. E. R. PEAL, C.B.E., D.S.C., late R.A.F., youngest son of Mr. and Mrs. H. W. Peal, of Oakhurst, Ealing, and KATHLEEN HELEN, only daughter of Col. on the Staff B. R. KIRWAN, C.B., C.M.G., Director of Artillery, War Office, and of Mrs. KIRWAN, present address, 25, Earl's Court Square, S.W. 5.

SOCIETY OF MODEL AERONAUTICAL ENGINEERS
(London Aero Models Association)

OPEN Competition No. 4 for the "Model Engineers' Challenge Cup," which is a rise off ground duration competition for fuselage models (rubber driven), will be held at Wanstead Flats, Sudbury, on July 14, 1923.

On Saturday, July 21, at 2.30 p.m., members will meet on the Paddington and District Aero Ground, Sudbury, to make attempts on the general records and glider records.

Meetings are held at Headquarters, 20, Great Windmill Street, Piccadilly, W. 1, every Friday at 7.30 p.m.

A. E. JONES, Hon. Sec.

PUBLICATIONS RECEIVED

Technical Notes. No. 134.—Standardisation and Aerodynamics. March, 1923.

No. 135.—Measuring an Airplane's True Speed in Flight Testing. By W. G. Brown. April, 1923.

No. 136.—Is There Any Available Source of Heat Energy Lighter than Gasolene? By P. Meyer. April, 1923.

No. 137.—Experiments with Fabrics for Covering Airplane Wings. By A. Pröll. April, 1923.

No. 138.—Determination of the Value of Wood for Structural Purposes. By R. Baumann. April, 1923.

No. 139.—Influence of Ribs on Strength of Spars. By L. Ballenstedt. May, 1923.

No. 140.—General Theory of Stresses in Rigid Airship, Z.R.-1. By W. Wattwes Pagon. May, 1923.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motor
The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1915

Published July 5, 1923

17,082. T. A. BATCHELOR. Optical apparatus for use in connection with aircraft.

APPLIED FOR IN 1922

Published July 5, 1923

7,620. G. BREZZI. Bodies of flying-machines. (198,810.)
10,544. RAUL, MARQUIS OF PATERAS PESCARA. Joy-sticks for helicopters. (178,452.)
13,839. A. J. LEBEDA and A. DE W. MULLIGAN. Direction or course indicators. (198,890.)
14,994. A. LAMBLIN. Oil-cooling radiators. (189,415.)
15,155. G. E. WILLIAMSON and A. C. BROWN. Oil-tanks. (198,903.)
31,700. RAUL, MARQUIS OF PATERAS PESCARA. I.C. engines. (189,149.) Secret Patents Re-assigned to the Inventor.

Published July 12, 1923

7,353. S. J. DEMOCRATIS. Parachutes. (199,104.)
8,203. E. H. J. C. GILLETT. Rotary I.C. engines. (199,156.)

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